

REMARKS

Claims 1-40 are pending in the present application. The Office Action and cited references have been considered. Favorable reconsideration is respectfully requested.

Claims 1-7, 11, 22, 29, 31, and 33-35 are rejected under 35 U.S.C. as being unpatentable over Huscroft et al (U.S. Patent No. 5,568,486). Claims 8-10, 12-21, 23-25, 30, 32 and 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huscroft et al (U.S. Patent No. 5,568,486) in view of Chiu et al (U.S. Patent No. 6,597,689; hereinafter refer as 'Chiu'). Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huscroft et al (U.S. Patent No. 5,568,486) as applied to claims 1 and 12 above, and further in view of Swerdlow (U.S. Patent No. 5,995,504). These rejections are respectfully traversed for the following reasons.

Claim 1 recites an interface device for providing a gateway function between lines of a public switched telephone network (PSTN) that carry digital hierarchy signals in a plurality of digital hierarchies and an asynchronous transfer mode (ATM) backbone network that carries signals in ATM format. The interface device includes a telephony transceiver operative to receive upstream digital hierarchy signals in a plurality of digital hierarchies from the PSTN, a hierarchy

converter operatively associated with the telephony transceiver to receive the upstream digital hierarchy signals in a plurality of digital hierarchy signals in a plurality of digital hierarchies therefrom and operative to convert at least some of the received upstream digital hierarchy signals to upstream signals in a single digital hierarchy distributed over a plurality of logical channels, an inverse multiplexing unit operatively associated with the hierarchy converter to receive the upstream signals in the single digital hierarchy distributed over a plurality of logical channels therefrom and operative to inverse-multiplex the received up-stream signals thereby to form upstream inverse-multiplexed digital hierarchy signals, an ATM framer operatively associated with the inverse multiplexing unit to receive the upstream inverse-multiplexed signals therefrom and operative to map at least some of the upstream inverse-multiplexed digital hierarchy signals into ATM cells thereby to form upstream signals in ATM format, and an ATM transceiver operatively associated with the ATM framer to receive the upstream signals therefrom and operative to transmit the upstream signals in ATM format to the ATM backbone network. This is not taught, disclosed or made obvious by the prior art of record.

Applicant respectfully submits that generally, Huscroft et al deals with a different problem than Applicant's

claimed invention, and further is structurally different from Applicant's claimed invention. Applicant respectfully submits that Huscroft is concerned with an interface the purpose for which is a bridge between an asynchronous network (ATM) and a synchronous network (SONET/SDH). Therefore, Huscroft teaches the assigning of idle cells during idle periods to transform non-continuous input stream to continuous output, and mapping predetermined numbers of sequentially arriving cells onto payload portions of INPUT frames. In addition, Huscroft discloses extracting data from ATM cells and introducing that data onto the payload of the SONET/SDH frames, or visa versa, from the payload of the SONET/SDH frames onto the data section of the cells' stream.

In contrast, the problem the Applicant seeks to solve is a different one. Applicant's invention is concerned with how to provide a gateway between a PSTN and an ATM network, one which is capable of converting traffic that arrives at the device of the invention along the PSTN network, into logical channels adapted for conveyance of the traffic along the ATM network. To carry out the solution, one of the features of the present inventive device, as recited in claim 1, is the hierarchy converter which is "operatively associated with the telephony transceiver to receive said upstream digital hierarchy signals in a plurality of digital

hierarchies and operative to convert at least some of the said upstream digital hierarchy signals in a plurality of digital hierarchies to upstream signals in a single digital hierarchy **distributed over a plurality of logical channels."**

Consequently, this feature, i.e., the hierarchy converter, allows the user of the device to transmit at least some of the traffic received from the PSTN interface as digital hierarchy signals, to its destination through the use of these logical channels as the at least some of the upstream digital hierarchy signals being in a plurality of digital hierarchies which are converted into a single digital hierarchy, may still retain their identity (e.g., be transmitted towards different destinations for different upstream digital hierarchy signals), as opposed to the solutions provided by Huscroft.

Further, as noted above, Applicant respectfully submits that Huscroft is structurally different than Applicant's claimed invention. In particular, as currently recited, Applicant has amended claim 1 to clarify the structure of the connections between the hierarchy converter and the inverse multiplexing unit. In particular, the inverse multiplexing unit is now recited as "operatively associated with the hierarchy converter to receive said upstream signals in the single digital hierarchy distributed over a plurality of logical channels and operative to inverse-multiplex said

receive upstream signals thereby the form upstream inverse-multiplex digital hierarchy signals." At least this element is not taught in Huscroft.

The Office Action asserts that the inverse-multiplexing unit can be found at Fig. 11; column 11, lines 56-60; "wherein, it is obvious that the PM5312 STTX splits the STS-12/STN-4 stream into four for inputting into the 'four ATM processors' 'PM5344 SUNI-155' by the inverse multiplexing unit." Applicant respectfully disagrees. Assuming for the sake of argument only that the hierarchy converter is the same as the "Par/Ser 18" and "Ser/Par 20" in Fig. 5, the inverse multiplexing unit cannot be the PM5312 STTX shown in Fig. 11, since that is not connected to the Par/Ser 18 and Ser/Par 20 of Fig. 5. Indeed, Fig. 11 shows four of the devices shown in Fig. 5 connected in parallel to the PM5312. Applicant respectfully submits that the Office Action does not set forth a primary case of obviousness. In particular, the Office Action does not set forth the scope and content of the prior art, the differences between the prior art and the claimed invention, and the motivation in the prior art for one of ordinary skill in the art to modify the prior to yield the claimed invention. The Office Action use of term "is obvious" does not meet that standard.

The Office Action further asserts that the ATM framer is taught either ('transmit/receive AAL processor 12' in Fig. 3-4; 'PM5345 SUNI-155' IN Fig. 11; for example, see col. 3, lines 29-32; col. 8, lines 4-7). This passage apparently equates transmit/receive AAL processor 12 in Fig. 3 to the user network interface device 10 in Fig. 11, and asserts somehow that this is equivalent to Applicant's claimed ATM framer. How these two elements can be equivalent is not understood, since Fig. 3 shows the processor 12 outside of the device 10. Moreover, neither the ATM terminal 12 nor the device 10 corresponds to the Applicant's claim to ATM framer, since they are not operatively associated with the inverse multiplexing unit recited in claim 1.

Moreover, Applicant respectfully submits that there is no disclosure of any logical channels. Applicant's claimed hierarchy converter which converts at least some of the upstream digital hierarchy signals in a plurality of digital hierarchy to upstream signals in a single digital hierarchy **distributed over a plurality of logical channels** is not taught in this patent. For at least these reasons, Applicant respectfully submits that claim 1 is patentable over the prior art of records.

Claims 2-11 are believed to be patentable in and of themselves and as they depend from and include the recitations

of claim 1 which is patentable for the reasons discussed above.

Claim 12 was rejected under 35 U.S.C. § 103 as being unpatentable over Huscroft in view of Chiu. This rejection is respectfully traversed. Claim 12 recites an interface device for providing a gateway function between lines of a public switched telephone network (PSTN) that carry digital hierarchy signals in a plurality of digital hierarchies and an asynchronous transfer mode (ATM) backbone network that carries signals in ATM format. The interface device includes an ATM transceiver operative to receive downstream signals in ATM format from the ATM backbone network, an ATM UTOPIA framer operatively associated with the ATM transceiver to receive the downstream signals therefrom and operative to map the downstream signals in ATM format into downstream digital hierarchy signals, an inverse multiplexing unit operatively associated with the ATM framer to receive the downstream digital hierarchy signals therefrom and operative to inverse-demultiplex at least some of the downstream digital hierarchy signals thereby providing downstream signals in a single digital hierarchy distributed over a plurality of logical channels, a hierarchy converter operatively associated with the inverse multiplexing unit to receive the downstream signals in a single digital hierarchy distributed over a

plurality of logical channels therefrom and operative to convert the downstream signals in a single digital hierarchy distributed over a plurality of logical channels to downstream digital hierarchy signals in a plurality of digital hierarchies, and a telephony transceiver operatively associated with the hierarchy converter to receive the downstream digital hierarchy signals in a plurality of digital hierarchies therefrom and operative to transmit the downstream digital hierarchy signals in a plurality of digital hierarchies to the PSTN.

Applicant respectfully submits that claim 12 is patentable at least for the reasons discussed above with respect to claim 1. Further, the Examiner cites Chiu as an example of prior art disclosing an ATM Utopia interface and framer. Applicant respectfully submits that as discussed in the previous Amendment, Chiu is directed to the creation of a logical connection in an ATM network preferably between two end users. One of ordinary skill in any art seeking to solve problems associated with interfaces between PSTN and ATM systems, as in the present invention, would not look to technologies associated with logical connections created in an ATM network between two end users for solutions. Likewise, one of ordinary skill in the art seeking to solve the problems disclosed in the Huscroft patent, related to bridging between

an ATM network and a Synchronize network SONET/SDH network, would not look to technology disclosed in the Chui patent for solving problems arising therein. Thus, Applicant respectfully submits that Chui is not analogous prior art with respect to Huscroft, and one of ordinary skill in the art would not have been motivated to combine the teachings thereof.

Claims 13-30 are believed to be patentable in and of themselves and as they depend from the independent 1 and 12 respectively, which are patentable for the reasons discussed above.

Claims 31, 32 and 33 are believed to be patentable for the reasons discussed above with respect to claim 1. Likewise, claims 34-40 are believed to be patentable in and of themselves and as they depend from and include the recitations of claim 32.

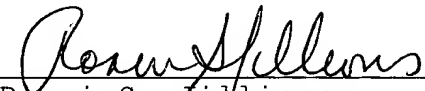
In view of the above amendments and remarks, Applicant respectfully submits that claims 1-40 are patentable over the prior art of record. Applicant submits that the application is in condition for allowance and early notice to this effect is most earnestly solicited.

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If the Examiner has any questions he is invited to
contact the undersigned at 202-628-5197.

Respectfully submitted,

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